THE

THERAPEUTICS OF VENESECTION.

BY

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REMARKS BY

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THE THERAPEUTICS OF VENESECTION.[1]

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It is difficult to recall a subject which so strikingly suggests the revolution which has taken place in therapeutics within the past quarter of a century, or which convinces an observer so earnestly that there is not that stability in the rules governing the application of medical means for ends which the practitioner would desire, or the symptoms of an illness demand. A practice which dates from the days of the father of medicine, and was so universally practiced in the ages following, winning for its adherents authorities like Galen, Sydenham, and Hunter, and in our day, Fordyce Barker, Graefe, Brown-Séquard, and Bowditch, could not have been so devoid of merit as the apathy and denunciation of these later times would seem to warrant. And yet if we reflect on the history of venesection we shall find that its course has not been much dissimilar from that of mercury, the alkaline treatment, and the various methods which have existed in our day, and which have won enthusiasts until time has tested their claims to merits, and placed them in their proper sphere. In their turn scoffers may deride the unlimited confidence we give carbolic acid, iodoform, and the salicylates, the abuse of which would operate as many evils as the abuse of venesection. Modern physiology and pathology have removed the ignorance which permitted the many gross errors which prevailed in the days of wholesale venesection, a practice which was alike the function of the barber and leecher as well as the resource of the court physician. As we read of the many cases

[1] Read at the meeting of the Section for Clinical Medicine and Pathology of the Suffolk District Medical Society, April 8, 1882.

reported in which venesection was performed, apparently with the only aim in view to exhaust the patient as speedily and effectually as possible, we cannot help deploring the abuse of venesection, and wondering why the patient of a former generation was so difficult to be killed. The refinement of modern therapeutics as well as the barbaric precepts of the ancient bleeders have been the main factors which have brought venesection into disrepute. The advocates of blood-letting would seem to have cast odium upon their practices by the precepts which they taught. For instance, Dr. Elliotson, in speaking of enteritis, says: "The first thing one has to do is to bleed the patient well. You must set him upright as he can be, and bleed him from a large orifice without mercy." An authority no less distinguished than Robert Jackson, formerly surgeon-general of the British army, frequently removed four pounds at one time, which was considered a moderate bleeding. Six pounds have been taken on several occasions, and a hundred and twelve ounces at a single bleeding in some. This practice, so formidable in appearance, implied no danger. He declares the practice is reasonable in theory, and is proved by experience to be founded on truth. Certainly the results reported by Jackson were extraordinary, for he says that fainting did not always occur, and the patient in most cases returned to his military duty within eight days in the full vigor of health. Galen is quoted as having bled largely during the plague, and he is the first to record the quantity taken. He says that he has taken from the patient in one bleeding six pounds of blood, which immediately extinguished the fever, nor was there any loss of strength in consequence. In these days of pilocarpine, aconitine, atropine, and the subcutaneous syringe, we can reflect on the therapeutics of only a few years ago. If we are to credit the wonderful reports of cases of recovery after extraordinary losses of blood, we are warranted in relieving the popular mind of the terrors which it entertains concerning hæmorrhages.

John Hunter is quoted as having seen several quarts of blood ejected from the stomach even by emaciated subjects, and improvement speedily followed the evacuation. Laucisi relates the case of a man of seventy who suddenly lost in a threatened attack of apoplexy eleven pounds of blood from his nose, and four more in fifteen days afterwards, without any visible failure of strength. Boerhaave and Haller have both reported remarkable hæmorrhages which have not seemed to have been followed by any evil result.

Nothwithstanding the many abuses to which venesection has been subjected, the fundamental principle presents claims for our attention and deserves application in special and well selected cases, and if we analyze the therapeutics of venesection we shall find sufficient cause for commendation and eager following.

There is no doubt that venesection was formerly used too indiscriminately and often employed too largely, but Dr. Flint says that with the natural tendency to pass from one extreme to the other it may be that the utility of blood-letting in certain cases at the present time is not sufficiently appreciated. The rules which governed the advocates of venesection in former times were in accordance with the lights which they possessed, and the methods which permitted the physician of a former time to continue his venesection until the coagulation ceased or until complete syncope declared itself, are a commentary on their limited knowledge of physiology and pathology. We now know without doubt that by a venesection we do not really diminish the amount of blood in the circulation, but we devitalize the blood of its most important factors, by robbing it of much of its fibrin and red globules, which are not readily reproduced. In accordance with fixed laws of endosmosis the blood becomes thinner and decidedly anæmic by its absorption of the fluids from other parts of the body, and in this manner the vital functions are impaired. It will be likely to effect harm, therefore, whenever it is important to economize the powers of

life, and it may contribute to a fatal result in diseases which involve danger to life by asthenia.

Flint says that blood-letting is never indicated by the fact that acute inflammation exists; it is a measure directed not to the disease *per se*, but to circumstances associated with the disease. It is admissible, if with the development of inflammation there exist high symptomatic fever, the pulse denoting augmented power of the heart's action, the patient being robust, and the disease not involving danger to life by asthenia. Venesection is admissible under the conditions just stated whenever the promptness with which its effects are obtained renders it desirable to adopt it in preference to other measures producing the same effect with more or less delay. If we are to be consistent, we should be guided by the motto, *Naturâ duce*, of our Society, and we should receive many a suggestion from the natural operations continually presented to us in the natural course of a disease. Every one is familiar with the relief which comes to headache by an epistaxis — to the congested uterus by a menstrual flow, or to dyspnœa by a slight hæmoptysis. I have at present a patient who has received within a few hours immense relief to a severe bronchitis by the appearance of her menses, when the ordinary remedies seemed to have failed. It is a well known fact that the temperature declines to an appreciable extent after an epistaxis, which, in most cases, is disproportionate to the amount of blood lost. Wunderlich says that after a moderate venesection the temperature rises a few tenths and gradually returns to the normal after a day or two, and may even at a later period sink below the normal.

Frere[1] says immediately after a moderate bleeding a fall of temperature of about 1° C. or 1.8 F. ensued, but after a few hours the temperature began to rise, and generally exceeded the temperature before the bleeding. Wunderlich says that general blood-letting in suitable cases of disease, and in a less degree local

[1] Virchow's Archiv.

abstraction of blood, have a similar effect; and it not seldom happens that the temperature, which just before was considerably elevated, becomes normal, or very nearly so, soon after. In most cases the temperature soon rises again to its previous height or even exceeds it. The temperature will remain reduced just in proportion to the actual improvement which has taken place in the patient's condition, at or after the bleeding, and the most decided influence on the course of the fever is brought about by a sufficiently copious blood-letting or a spontaneous hæmorrhage (as in epistaxis or in menstruation). Granting that there are special indications for blood-letting, it is important to know when and how we are to avail ourselves of this agent and when to cease. Generally, a condition of plethora with inflammatory symptoms would indicate it, especially if there is a full, bounding pulse. In limiting the amount of blood to be drawn we should not be guided by the condition of the pulse alone so much as by the improvement in the general condition of the patient. We are justified in supposing that many of the reported cases are grossly exaggerated, but it is an undoubted fact that venesection was much abused before the methods of the cold-water pack and the febrifuge effects of quinine were thoroughly appreciated. I have had an opportunity of testing the efficacy of venesection under the following circumstances.

Several months ago a patient whom I had never treated before presented himself at my office complaining of a headache, which was bilateral and at times very intense. His digestion was in good condition; he was not losing an appreciable amount of strength, and he was able to attend to his work, but with less vigor than formerly. As he was a great smoker and a hard worker I attributed his symptoms to an excessive use of tobacco and hard work. I advised him to rest, to moderate his use of tobacco, and to take tonics. There was no vomiting nor œdema, nor were there any symptoms which would attract my attention to his kidneys if I

might except a slight dimness of vision, which, considered in connection with his headache and slight debility, caused me to request him to allow me to examine the urine, which he neglected to do. His age was forty-two. As he was an ordinary office patient he passed from my attention until late one evening I was called to attend him by a messenger who told me that the patient was suddenly seized with convulsions. I learned that the patient had continued to complain of his head and of amaurosis, but apart from those symptoms he had been apparently well until a few days before the convulsions appeared, and in fact he had continued working, although he was growing more feeble, and other symptoms which evidently indicated nephritis had supervened, such as œdema of the feet, hands, and face, with vomiting, and pain in the lumbar region, together with a diminution in the amount of urine passed. When I arrived at his house I found the patient in a profound coma, with convulsions. His pupils were dilated. His skin was dry and hot, and the frontal veins and face were moderately although not remarkably swollen. The œdema was slight. There was a full, bounding pulse, and the apex beat was abnormally labored, full, bounding, and slow. The temperature was 102° F., and the small quantity of urine which I was able to obtain was quickly coagulated by heat during the necessary delay prior to the application of the measures for relief, and relief was demanded at once. There was no time for the application of diaphoretics, diuretics, nor other derivatives. Death was imminent, and I believe would have speedily followed had not immediate action been taken.

I remembered that when I was a student in the office of Dr. H. I. Bowditch he had advocated venesection under proper conditions, and although I could not remember that I had heard any direct teaching given on the subject, I determined to bleed in the present case, and to follow the advice given by Dr. B. W. Richardson, and quoted by Dr. Bowditch, who claimed for venesection a first place in the treatment of uræmic con-

vulsions. I allowed ten ounces of blood to flow from the median cephalic vein, from which the blood came in a dark and steady stream. The relief which appeared after the venesection was not long delayed, and was most satisfactory. The convulsions ceased, the face assumed a more natural hue, the pulse lost its labored character, the breathing became easier, and consciousness after a short interval returned. He was then wrapped in hot and moist blankets, and was given an eighth of a grain of elaterium. Perspiration was excited, and he rested easily. Under diuretics and jaborandi and milk at first, and afterwards Basham's mixture, the patient made a slow and gradual recovery, with a single intermission on the fourth day, when it was necessary to remove five ounces of blood.

The urine at first contained abundant epithelial and granular casts; it was of low specific gravity, 1008, and contained a large quantity of albumen. After three months the albumen and casts had wholly disappeared from the urine, the œdema had disappeared, and, except a diminution of general vigor, the patient was really well.

I consider the case one of acute nephritis occasioned by exposure to cold in a patient considerably debilitated by hard work and general disregard of hygienic laws. Nephritis sometimes approaches so insidiously, and with symptoms so slightly emphasized, that a diagnosis is oftentimes difficult unless an examination of the urine is made. In this connection it may not be irrelevant to the subject to state that as obscure renal diseases are sometimes suspected by the single symptom of vomiting, to which Dr. Ellis attracted attention, so in like manner a headache, especially if bilateral, intense, and accompanied by amaurosis, may attract attention to a nephritis of which it may be at first the only symptom of dangerous conditions. The cry of venesection may be imagined to be, "Save me from my friends."

From the consideration of this subject we are justified in drawing the following conclusions: —

(1.) That although the errors of former days, without doubt, allowed a very great abuse of venesection, it has sufficient merit as a therapeutic agent to demand our earnest consideration.

(2.) If we are sincere in following the motto of our Society, *Naturâ duce*, we shall take the suggestions which nature gives and bleed in carefully selected cases.

(3.) That in febrile attacks a loss of blood will lower the temperature, and this decrease in temperature is known to be disproportionate to the amount of blood lost.

(4.) That by venesection we do not actually diminish the volume of blood, but we cause the blood to become more watery, the free passage of the blood through the pulmonary circuit seems to be promoted, and the functional labor which the lungs have to perform is diminished by the abstraction of a certain number of the more solid particles.

(5.) It is fallacious to depend upon the condition of the pulse alone as the criterion of the amount of blood to be removed, or the benefit which the patient derives by a venesection. After a venesection the pulse sometimes appears to indicate increased power of the heart's action. The artery seems to strike against the finger with more force than before the abstraction of blood. Formerly practitioners were misled by this effect upon the pulse, and blood-letting was employed as a means of increasing the power of the heart's action. The sensation which the finger receives is delusive, and is caused by the quickness of the movements of the artery. This has been shown by the sphygmograph to depend on the diminished tension of the arteries following the abstraction of blood. It is to be borne in mind, says Flint, in estimating the power of the heart's action by the sensible characters of the pulse, that the sense of resistance which is felt and the amount of pressure required to impress the artery are the evidences of strength. I cannot do better than to make use of the statements quoted in Dr. Bowditch's mono-

graph on venesection which he read at the annual meeting of the Massachusetts Medical Society, in 1871.

"Dr. Richardson says:[1] 'If blood letting were in this day an unknown remedy, and were some man to discover it, we should receive that man as the greatest amongst us, and send him to posterity as one of the lights of the age.' And again he says: 'The confidence of the ancients in the practice of blood letting, their fearlessness of any immediate danger from it, was, I believe, as well founded in truth, as the cowardice and assertion, without observation, of the present day is founded on error.' He sums up as follows: 'I would recall that blood-letting as a point of scientific practice is still open to us in some stages (early stages) of typhoid fever, in cases where there is a sudden tension of blood, of which sunstroke is an example; in cases of chronic congestion of the brain; in cases of acute pain from (inflamed) serous membrane; in some cases of spasmodic pain (gall-stones, etc.); in others of sudden arrest of circulation from concussion; in congestion of the right heart, and it may be in some cases of extreme haemorrhage. Above all I claim for it a first place in the treatment of simple uraemic poisoning.'

"Dr. Sutton[2] gives cases in which bleeding was resorted to to relieve distention of heart and passive congestion of the lungs. He ordered it, not to relieve inflammation, but to cure obstructions.

"Fordyce Barker, M. D.:[3] 'I am gradually getting to bleed more frequently. My conviction that this resource in practice has been too much neglected by myself and others has been progressively growing for some years.' Dr. Barker would bleed to prevent abortion in some cases.[4] So in renal congestions of the

[1] Address Introductory to the Ninety-fifth Session of the Medical Society of London, on Blood-letting as a Point of Scientific Interest, by B. W. Richardson, M. D., F. R. S., President. Practitioner, No. 5, November, 1868.

[2] Medical Times and Gazette, December 18, 1869.

[3] New York Medical Journal, January, 1871.

[4] "In former days abortion, even *that had gone so far as to cause bloody discharges from uterus*, I have seen checked by venesection.
H. I. Bowditch."

brain with coma, and when the skin is hot there is nothing so sure. He would bleed a woman in convulsions thirty ounces, and give elaterium also. 'We must not,' he also declares, 'avoid bleeding in some cases even if the patient is feeble. In puerperal mania, at least in some very rare cases, venesection is of the greatest benefit.'"

REMARKS BY DRS. H. I. BOWDITCH, J. FORDYCE BARKER, AND HARLOW.

Dr. H. I. Bowditch was called upon for some remarks, and said that the paper contained many valuable suggestions for the present time. No doubt bloodletting was carried out in a heroic and irrational manner by our fathers, but that certainly was no reason why for twenty years past this useful procedure should have been virtually discarded from the practice of medicine. It is a fact that a great majority of the younger physicians of our day do not know how to perform a venesection. It is not taught among the other operations of minor surgery at Harvard University. If this total abandonment of what in certain severe acute cases is an important measure for combating disease is not a *reductio ad absurdum* it would be hard to define the term.

Many years ago, when in general practice, he found that abortion may be prevented by bleeding. In more than one case of threatened abortion the pains have been observed to cease, and in one instance, especially remembered, the hæmorrhage as well as the pains subsided after a moderate quantity of blood had been extracted from the arm. The loss of six or eight ounces of blood is scarcely noticeable in an adult. This is obvious from surgical operations and in labor. Bleeding should be employed in acute diseases of the brain, which are always or at least generally accompanied by congestion, though in these modern times we are told

that there is no such condition possible as congestion of the brain. Often in delirium, with a hot and a flushed face, or in some cases of coma, bleeding is judicious treatment. In regard to the lungs, it is perhaps not wise to say that a pneumonia can be cut short, but doubtless some cases would be relieved of pain in the chest, dyspnœa, and in the end vastly benefited by the loss of a certain amount of blood by venesection. In pleurisy there was formerly no more common treatment than one or more bleedings. In our day nobody thinks of bleeding for a stitch in the side. Dr. Bowditch was conversing with a member of our Society, now unfortunately absent from illness, who advanced the idea that, if, in severe cases of pleuritic pains, with all the signs of acute pleurisy, we should bleed the patient when sitting up and until he felt a little faint, there would be fewer cases of large effusion and less tapping than we now have. This question was well worth consideration by practitioners. Dr. Bowditch was inclined to believe that there are a greater number of large effusions now than were found thirty or forty years ago. But whether if we bled whenever we met with a sharp pleuritic pain in acute cases, effusions would be less, he could not say, as he had no precise data on which to rest an opinion. But the question, he repeated, is worth the serious thought, not the supercilious contempt, of the profession.

In diseases of the heart bleeding is often of the greatest service. Even in chronic cases, when sudden dyspnœa comes on, congestion of the lungs, accompanied by râles throughout them, without effusion into the pleura, the results of venesection are often singularly beneficial. In some cases it seems as if the heart were obstructed, and could no longer carry on the pulmonary circulation, and the withdrawal of blood is the means of prompt relief. One case of this character was thus treated, and fourteen ounces of blood removed, with the effect of complete relief of all actual distress, and the patient was comparatively well for a

long time afterward. In some cases in which the pulse is hardly perceptible, and the heart, so to speak, swollen from the amount of blood contained in it, the relief from blood letting is very great. The pulse rises, and the heart's action becomes freer and easier, followed by great relief to the patient.[1]

Dr. Fordyce Barker, in response to a call from the chair, expressed his pleasure at being present, although he had not expected to take part in the discussion.

He said: Forty-two years ago I was a student of medicine in this city, with Drs. Bowditch, Shattuck, Perry, and Stedman as instructors. The room for study was 13 School Street, which had over the street door the sign "Lung Infirmary," and we had the opportunity of studying with our teachers auscultation and percussion on the patients who came in. I remember well that one chilly day in June a brick-layer came in his shirt sleeves, suffering from intense pain in his side; every breath was cut short by a groan. Dr. Bowditch examined him carefully with us, and finding no physical signs in his chest directed me to bleed him, and told me how to do it. With great anxiety I was successful in stabbing the vein, and a full stream of

[1] Since the meeting Dr. Bowditch had, when called in consultation, advised venesection in the following case:—

It was that of a strong man, aged twenty-two years, who had been attacked six or seven days previously by all the rational and physical signs of double pneumonia: high fever, pain in chest, rusty sputa, dyspnœa, dullness on percussion, with bronchial respiration, bronchophony, and crepitant râles in both backs, at lowest part. The pulse was quick, full, and strong. He naturally was considered as in a very favorable condition, and on the question of venesection being raised, it was decided affirmatively. About twelve ounces were taken with great comfort to the patient. The oppression of breathing became much less, and the whole natural language of the patient was that of relief. It is true that about the same time the window of the room was opened, and the close, ill-ventilated atmosphere in which he had been lying for days was purified. This plan of having the windows opened about as much was continued afterwards day and night, care being taken, by curtains, that the air should not fall directly on the patient, while the room was kept by a stove-heat sufficiently warm. Quinine and a tonic course was otherwise used. The disease was not cut short, but apparently the treatment moderated its severity, and helped towards the perfect cure which took place.

blood flowed. Very soon the man was perfectly relieved from pain, and Dr. Bowditch showed me how to close the vein. Our text-book on Practical Medicine was Marshall Hall, edited by the late Dr. Jacob Bigelow and Dr. Oliver Wendell Holmes, a book which I now often take down from my shelves with pleasure and profit, and I well remember my unexpressed surprise that Dr. Bowditch did not follow the rule of Marshall Hall, to bleed *ad deliquium*, but directed the vein to be closed as soon as the patient could breathe without pain. I went to see the patient the next morning, and found that he had gone to his work. This was my first lesson and experience in venesection. Although I have never given this up as a therapeutical resource, I believe that I have sometimes neglected it where I might have benefited my patient, but I do not think that I have ever carried the practice to excess.

Some ten or twelve years ago, on the afternoon of my landing from a steamer from Europe, I was called to see a patient in whom I thought venesection was indicated. As this was the first patient that I was called to see I had no lancet in my pocket, and went to the only surgical instrument shop quite near to procure one, but found that there was none in the shop. It seemed to me an amusing illustration of the change of medical practice, that forty years ago every country store that sold sugar and tea and calico and clay pipes kept also lancets for sale, and that now in the centre of the population of a great city one would be compelled to go two miles and a half to buy one!

Soon after I wrote an essay on "Bloodletting as a Therapeutic Resource in Obstetrics," to which the author of the paper just read has referred. It is some years since I have looked at this paper, and I do not now intend to take up your time in recalling points which have already appeared in print. I do not remember that I have changed my views in any respect since that paper was published, but I think that I have had some additional confirmatory experience.

I understood the author of the very interesting paper to which we have just listened to express the opinion, and to quote Dr. Flint, whose authority carries the greatest weight with us all, that venesection should never be resorted to in asthenia.

It seems to me there are some important exceptions to this law.

I remember once being called suddenly to a lady who seemed to be dying from asphyxia. She was near the end of her first pregnancy, sitting in a chair, breathing with the greatest difficulty, or rather only making a great but unsuccessful effort to breathe, as I could hear no respiratory murmur. The action of the heart was labored and tumultuous, but the pulse at the wrist was hardly perceptible. Her emaciated face was livid and covered with large drops of perspiration. The danger of death was so imminent that I did not stop for further examination, but at once opened a vein in her arm. The pulmonary œdema and accumulation of the blood in the right cavities of the heart were due to the pressure of a gravid uterus greatly overdistended by an excess of liquor amnii. Two days after she discharged an enormous quantity of this fluid, and was delivered, without much pain, of a dead hydrocephalic fœtus. She recovered favorably, and has since had living children.

Some months since I was asked by a friend, a distinguished teacher of obstetrics, to see with him a primipara at about the seventh month of pregnancy, to consider the question of the propriety of inducing premature labor. She was suffering from excessive œdema of the trunk, the genitalia, and the lower extremities, and the urine was albuminous, coagulating almost solid.

She had no other grave symptoms. I recommended a variety of measures, particularly venesection, but opposed the induction of premature labor unless other symptoms should appear. But the case was a very important one, socially, and my friend had so much fear of pulmonary œdema that he brought labor on.

The mother did well, but the child was lost. Six weeks after this, as often happens to us all, I was asked to see another case of precisely a similar character, and to consult as regards the same procedure. I should mention that in both cases incisions had been made in the labia, and in the latter case also in the legs, from which serum was drained in very considerable quantities. In the last case also vision was very much impaired, so that she could not read, although she could distinguish persons. This patient was first bled about twenty ounces. She was then given two drachms of compound powder of jalap. After a free action of the hydragogue she was put on a rigid milk diet, and the tincture of the chloride of iron and digitalis. The œdema and all other unpleasant symptoms disappeared before labor came on. She had a living child, still alive, and her convalescence was only interrupted by a mild and short malarial attack.

Without taking up the time of the Society by an elaborate description of this point, I wish simply to express the belief, illustrated by the narratives that I have just given, that there are cases of extreme and dangerous serous plethora in the anæmic and the asthenic which can be best and most effectively relieved by venesection.

I will mention a case of a different type from any referred to either by the author of the paper of the evening, or by Dr. Bowditch or myself.

Early in March I was called by a brother practitioner to see a lady forty-nine years of age, married thirty years. She had never been ill for a day since her marriage, except in 1854, when she had a rather severe attack of cholera. Her life had been a very happy one, having a devoted, loving husband, with abundant means to gratify every taste. She had no children, but had menstruated easily and regularly every month since her marriage. Some things that I learned led me to suspect that her sterility was not owing to any defect in her own system. She had menstruated early in August; September and October

passed without any disturbing symptoms. Early in November she began to complain of insomnia, loss of appetite, wandering neuralgic pains, and for the first time in her life she became despondent, morose, and irritable. She lost a great deal of flesh, and became very taciturn, going on from bad to worse, until her appearance was that of a person in settled melancholia. Her physician, a man highly esteemed in the profession, was a classmate and old friend of her husband, and had always been like a brother with her, but for a few weeks she had not hesitated to show a great aversion to him. After a careful study of the case I proposed venesection, which was at first very coldly received by her physician; but it was soon apparent that the objection was mainly personal, as the doctor remarked that he had never bled any one. To our surprise, she expressed a warm approval of the proposal. As I opened a vein she watched the flow of blood with a most contented expression, and strenuously objected when I attempted to close the vein, after taking about sixteen ounces, and I therefore allowed four ounces more to flow. She then turned to her doctor and said, "If you had not been a fool, you would have done this weeks ago," and then, for the first time in many weeks, laughed heartily at her own remark. Her improvement from this time was in every respect wonderful. I was asked to see her again early in this month, and by her urgent request again took away about four ounces. It is sufficient for me to speak of the therapeutic results, and leave others to say whether we had to deal with cerebral congestion, subacute meningitis, or what the pathological condition was that was so happily removed by the venesection.

I will venture to relate another case in which I have felt a great interest, and which, it seems to me, brings out some other points bearing on this discussion, which, so far as I have seen, have not been brought out by writers on this topic.

In September, 1880, a lady from Massachusetts called

on me with a letter from a Boston physician. She was forty years of age, had been married twelve years. She had been delivered of one dead child, and had been subsequently pregnant seven times, and miscarried between the tenth and the eighteenth week with each, in spite of every precaution and of medical treatment to prevent such an accident. Her sentiment of maternity was very strong, and she was extremely anxious to have a living child, but she had very little hope. She was on a pleasure trip to West Point, Niagara, etc., but having passed one menstrual period she suspected herself to be again pregnant. On a careful examination I could not find the slightest evidence of disease in any pelvic organ to explain her repeated miscarriages. But the uterus was somewhat heavier than normal, low down in the pelvic cavity, and as she felt a necessity for much more frequent micturition than usual, I expressed the belief that she was about seven weeks pregnant.

She wished to return at once to her home if this was the fact. On inquiring I learned that always soon after pregnancy commenced her appetite became remarkably good, she gained rapidly in flesh, and between the eighth and tenth week she began to suffer from difficulty in breathing, palpitation of the heart, frequent attacks of vertigo, and sometimes severe but evanescent headache, which symptoms went on increasing until the fœtus was thrown off. She took the greatest care of herself, seldom going out, but passing the most of her time on the sofa in her room. She was a woman of remarkable intelligence and kind feeling, and I explained to her my views in full. I told her that a healthy uterus in a healthy maternal system did not easily get rid of a healthy fœtus until the proper time, that she seemed to have no disease of the organs connected with childbirth, and there was no reason from her statements to suspect that her abortions were the result of disease of the ovum. I therefore believed them to be due to a perverted condition of her general system resulting from pregnancy, and urged her to

continue her pleasure trip, and during her pregnancy to take exercise and be out in the open air as much as possible. I recommended her to confine herself strictly to a milk and farinaceous diet, and two or three days previous to the time when menstruation would have occurred if she were not pregnant to be bled, the first time about sixteen ounces, decreasing the amount at each succeeding period. I wrote to my friend who had sent the patient to me, telling him what my advice to his patient had been, giving him as my theory of the case substantially the following opinion: Conception in this lady seems to stimulate very actively the nutritive and assimilative functions of the maternal system instead of those nervous activities which should nourish and develop the growth of the ovum.

My friend replied, in rather a derisive tone, with that want of respect of youth for their elders characteristic of the present age, that he "thought the theory creditable to my imagination and genius." He evidently had no faith in it, although he honestly began by carrying out the plan of treatment proposed. He first bled her, and I suspect she was the first patient whom he had ever bled, and that he performed this little operation with more trepidation than he usually feels in his great surgical operations in gynæcology.

The patient was under the care of her family physician, a very able man in the city where she lived, and the plan of treatment suggested by me was faithfully carried out.

On the 14th of April, 1881, I received a letter informing me of her happy accouchement with a boy still living. For a few days she appeared to do well; her physician frequently examined her urine, but found no albumen except a small trace a few days before her confinement. Three or four days after labor the urine became highly albuminous, the action of the heart feeble, and her general condition bad.

I visited her April 23d, and at that time, in addition to the symptoms I have mentioned, there were marked

signs of threatening phlegmasia dolens. For a few days she apparently improved, but suddenly symptoms of heart failure came on again, and she died rather unexpectedly, I think, two weeks after confinement.

Dr. Bowditch mentioned a case which he had recently seen in consultation in which venesection was advised, and the operation was attempted, but it was impossible to carry it out on account of the opposition of the patient, who was delirious. Leeches were applied with the effect of abstracting several ounces of blood; great improvement in all the serious symptoms observable in less than twenty-four hours.

Dr. Harlow observed that the case spoken of by Dr. Bowditch had occurred in his practice. The urine had been tested, and became solid from the amount of albumen it contained. The relief from the loss of this small amount of blood was surprising.

Dr. Bowditch asked Dr. Barker the ultimate condition of the case last mentioned by him.

Dr. Barker replied that the patient died from uræmic poisoning. Dr. Barker had maintained a frequent correspondence with the lady's physician in Boston, and had kept himself fully informed concerning the case. There had been no albuminuria until a few days before confinement. Within a few days after delivery albuminuria developed to an intense degree accompanied by phlebitis. Ten days after confinement the urine was rendered almost solid by nitric acid or heat; the heart's action was very feeble. The frequent bleeding was not thought to have induced the cardiac weakness, but to have been conservative in saving the heart's energy and prolonging life beyond what would have been possible without its aid.

Since the appearance of the above paper in the *Medical and Surgical Journal* I have received the following letter from an M. D., in Pawtucket, R. I., on which Dr. Bowditch has commented. W. A. D.

"Ruddy boy, aged fourteen, — violent pneumonia, very free, bloody sputa, — bled eight A. M., bled four

P. M., next day bled twenty-four ounces in all. *Disease was aborted.* Always bleed in puerperal fits unless purely hysterical. Never saw a patient die thus treated. Cathartics of course, and chloral and bromide. Scarlatinal dropsy treat in the same manner. Perhaps bleed with leeches to loins. Stimulating diuretics never. Convulsions must stop at once or patient dies. In peritonitis bleed, hot, dry, bran bags. Opium. Not often can we bleed drunkards, never an old one. Bleed in all congestions and inflammations, pure, boldly, cautiously, or not at all if a part of a specific fever. Bleed early, or not at all. Never bleed in asthenic conditions. Epidemics usually asthenic. The morphine plan in childbed cases will prove a bad one. These are general rules of course. I never go without a lancet in my pocket. M. D.

PAWTUCKET, R. I., *May* 13, 1882."

"Your paper you see hit well. I was called upon yesterday to bleed a man, and to teach a young medical man how to perform the operation.

H. I. BOWDITCH."